AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for transmitting real-time data packets in a cyclic communication system, wherein each of a plurality of transmission cycles has a first partial cycle for transmitting real-time communication and a second partial cycle for transmitting non-real-time communication, the method comprising:

pre-planning~~planning~~ the real-time communication before the communication starts;

determining a cycle number of a particular transmission cycle; and

processing a transmission sequence of real-time data packets within the first partial cycle of the particular transmission cycle,

wherein the transmission sequence is composed of one or more partial sequences, the composition of which depends on the cycle number determined for the particular transmission cycle, and

wherein the cycle number determines which of the partial sequences are transmitted in the particular transmission cycle.

2. (previously presented): A method as claimed in claim 1, wherein times for forwarding each of one or more real-time critical data packets are planned in advance.

3. (original): A method as claimed in claim 1, wherein the transmission sequence is a receive sequence or a send sequence of a user of the communication system.

4. (original): A method as claimed in claim 1, wherein a length of the first partial cycle is selected as a function of the transmission sequence.

5. (original): A method as claimed in claim 1, wherein the transmission sequence is generated from a dynamic transmission list comprising one or more partial sequences and one or more conditional control commands, wherein a corresponding condition for each of the conditional control commands is based on the cycle number of the particular transmission cycle.

6. (currently amended): A user of a cyclic communication system that is operable to transmit one or more transmission cycles each of which has a first partial cycle for real-time communication and a second partial cycle for non-real-time communication, wherein the real-time communication is pre-planned~~planned~~ in advance before the communication starts, the user comprising:

means for determining a cycle number of a particular one of the transmission cycles; and

means for processing a transmission sequence within a first partial cycle of the particular transmission cycle,

wherein the transmission sequence is composed of one or more partial sequences the composition of which depends on the cycle number of the particular transmission cycle, and

wherein the cycle number determines which of the partial sequences are transmitted in the particular transmission cycle.

7. (original): A user as claimed in claim 6, wherein the transmission sequence is configured as a receive sequence or a send sequence of the user.

8. (original): A user as claimed in claim 6 further comprising means for selecting a length of a first partial cycle of the particular cycle as a function of the transmission sequence.

9. (original): A user as claimed in claim 6, further comprising means for generating the transmission sequence from a dynamic transmission list which further comprises one or more partial sequences and one or more conditional control commands, wherein a corresponding condition for each of the conditional control commands is based on the cycle number of the particular transmission cycle.

10. (currently amended): A cyclic communication system with at least a first and a second user, wherein each of one or more transmission cycles has a first partial cycle for real-time communication and a second partial cycle for non-real-time communication, wherein the real-time communication is pre-plannedplanned in advance before the communication starts, and the first and the second users comprise:

means for determining a cycle number of a particular transmission cycle; and

means for processing a transmission sequence in the first partial cycle of the particular transmission cycle,

wherein the transmission sequence is composed of one or more partial sequences the composition of which depends on the determined cycle number, and

wherein the cycle number determines which of the partial sequences are transmitted in the particular transmission cycle.

11. (original): A cyclic communication system as claimed in claim 10, wherein the transmission sequence is configured as a receive sequence or a send sequence.

12. (original): A cyclic communication system as claimed in claim 10, further comprising means for selecting a length of a first partial cycle as a function of the transmission sequence.

13. (original): A cyclic communication system as claimed in claim 10, further comprising means for generating the transmission sequence from a dynamic transmission list which further comprises one or more partial sequences and one or more conditional control commands, wherein a corresponding condition for each of the conditional control commands is based on the cycle number of the particular transmission cycle.

14. (currently amended): A communication system operable to isochronously transmit data between respective users during transmission cycles, the system comprising:

a network operable to connect the users;

an application program corresponding to a first user;

a memory portion corresponding to the first user and operable to store user data to facilitate control of the first user, and output data to be transmitted over said network to a second user;

a cycle counter corresponding to the first user and operable to count the transmission cycles corresponding to a communication between the first user and the second user; and

a processing portion corresponding to the first user and operable to determine a number of a subsequent transmission cycle,

wherein the output data is transmitted from the first user to the second user during the subsequent transmission cycle which is divided into a real-time partial cycle and a non-real-time

partial cycle in a manner that depends on the cycle number determined by said processing portion, ~~and~~

wherein the cycle number determines which of the partial sequences are transmitted in the subsequent transmission cycle~~.~~

wherein a real-time communication is pre-planned before the communication starts.

15. (original): A communication system as claimed in claim 14, wherein the real-time partial cycle comprises one or more microcycles and a transmission sequence of the one or more microcycles is dynamically programmed based on the cycle number determined by said processing portion.

16. (original): A communication system as claimed in claim 15, wherein the transmission sequence is predefined prior to commencement of the communication between the first and second users.

17. (original): A communication system as claimed in claim 14, wherein the network comprises a network based on at least one of FieldBus, Profibus, Ethernet, Industrial Ethernet, FireWire, PC-internal bus systems (PCIs) and Isochronous Realtime Ethernet.

18. (previously presented): The method as claimed in claim 1, wherein, based on the planning of the real-time communication, only updated data of the real-time data packets is transmitted in the transmission cycles.

19. (previously presented): The method as claimed in claim 18, wherein the real-time data packets comprise a peripheral image and wherein unmodified portions of the peripheral image are not transmitted in the real-time communication cycle.

20. (previously presented): The method as claimed in claim 5, wherein the conditional control commands utilize the cycle number to identify which ones of the partial sequences are to be transmitted in the particular cycle.

21. (new): A method for transmitting real-time data packets in a cyclic communication system, wherein each of a plurality of transmission cycles has a first partial cycle for transmitting real-time communication and a second partial cycle for transmitting non-real-time communication, the method comprising:

planning the real-time communication;

determining a cycle number of a particular transmission cycle; and

processing a transmission sequence of real-time data packets within the first partial cycle of the particular transmission cycle,

wherein the transmission sequence is composed of one or more partial sequences, the composition of which depends on the cycle number determined for the particular transmission cycle,

wherein the cycle number determines which of the partial sequences are transmitted in the particular transmission cycle, and

wherein each partial cycle for transmitting real-time communication comprises microcycles.

22. (new): The user as claimed in claim 6, wherein each partial cycle for real-time communication comprises microcycles.

23. (new): The cyclic communication system as claimed in claim 10, wherein each partial cycle for real-time communication comprises microcycles.

24. (new): A communication system operable to isochronously transmit data between respective users during transmission cycles, the system comprising:

a network operable to connect the users;

an application program corresponding to a first user;

a memory portion corresponding to the first user and operable to store user data to facilitate control of the first user, and output data to be transmitted over said network to a second user;

a cycle counter corresponding to the first user and operable to count the transmission cycles corresponding to a communication between the first user and the second user; and

a processing portion corresponding to the first user and operable to determine a number of a subsequent transmission cycle,

wherein the output data is transmitted from the first user to the second user during the subsequent transmission cycle which is divided into a real-time partial cycle and a non-real-time partial cycle in a manner that depends on the cycle number determined by said processing portion,

wherein the cycle number determines which of the partial sequences are transmitted in the subsequent transmission cycle, and

wherein each partial cycle for real-time communication comprises microcycles.